

CLAIMS

We Claim:

1. An automated method of updating data within a peer-to-peer enterprise information system comprising:
 - 5 publishing a data change for a source data type over a broadcast channel of said peer-to-peer enterprise information system;
 - in response to said data change a join engine peer accessing a global attribute object model for identifying a dependent output entity, said output entity
 - 10 comprising a same attribute of said data change, and for identifying additional attributes for forming a modified attribute set;
 - generating a query directed to a source system comprising said additional attributes for forming said modified attribute set; and
 - responsive to a reply from said source system, said join engine peer
 - 15 automatically forming said modified attribute set and publishing said modified attribute set to an output source system associated with said output entity.

2. A method as described in Claim 1 wherein said broadcast channel is associated with an adapter peer for a source system for said source data
- 20 type.

3. A method as described in Claim 1 wherein said published data change includes at least one changed attribute and all other attributes of said source data type.

4. A method as described in Claim 3 wherein, if said additional attributes of said output entity are contained within said all other attributes of said source data type, said join engine peer forms said modified attribute set
5 directly from said published data change.

5. A method as described in Claim 1 wherein said global attribute object model maps dependencies between output entity attributes and source entity attributes.

10

6. A method as described in Claim 1 wherein said forming comprises performing a data transformation.

7. A method as described in Claim 6 further comprising performing a
15 data transformation for said published data change.

8. A method as described in Claim 7 wherein said performing a data transformation is by said join engine peer.

20 9. A method as described in Claim 8 wherein said performing a data transformation comprises automatically transforming said data change into a transformation script of a transformation language for implementation by said join engine peer.

10. A method as described in Claim 9 wherein said transformation language is substantially compliant with XSLT syntax.

11. A method as described in Claim 9 wherein said transformation language is substantially compliant with JAVA language syntax.

12. An automated method of updating data within a peer-to-peer enterprise information system comprising:

in response to a data change broadcast over a broadcast channel, a join engine peer performing a data transformation for said data change and accessing a global attribute object model for identifying a dependent output entity, said output entity comprising a same attribute of said data change, and for identifying additional attributes for forming a modified attribute set;

responsive to identifying said output entity and said additional attributes, generating a query directed to only source systems comprising said additional attributes for forming said modified attribute set;

responsive to replies from said source systems, said join engine peer automatically performing a data transformation for said additional attributes and forming said modified attribute set; and

20 publishing said modified attribute set to an output source system associated with said output entity.

13. A method as described in Claim 12 wherein said broadcast channel is associated with an adapter peer for a source system for said source

data type.

14. A method as described in Claim 12 wherein said published data
change includes at least one changed attribute and all other attributes of said
5 source data type.

15. A method as described in Claim 14 wherein, if said additional
attributes of said output entity are contained within said all other attributes of
said source data type, said join engine peer forms said modified attribute set
10 directly from said published data change.

16. A method as described in Claim 12 wherein said global attribute
object model maps dependencies between output entity attributes and source
entity attributes.

15

17. A method as described in Claim 12 wherein said performing a
data transformation comprises automatically transforming said data change into
a transformation script of a transformation language for implementation by said
join engine peer.

20

18. A method as described in Claim 17 wherein said transformation
language is substantially compliant with XSLT syntax.

19. A method as described in Claim 17 wherein said transformation

language is substantially compliant with JAVA language syntax.

20. A computer controlled method for data processing comprising:

a) in response to a data change communicated over a peer-to-peer

5 communication system of an enterprise information management system,

accessing a data dependency model to determine an output attribute that is
dependent on said data change;

b) determining source entities for obtaining source data required to
generate said output attribute;

10 c) querying said source entities to obtain said source data;

d) performing transformations on said source data, and said data
change, to produce said output attribute; and

e) broadcasting said output attribute over said peer-to-peer
communication system.

15

21. The method of Claim 20 wherein said data dependency model
comprises a globally accessible object model comprising data dependency
functions which map output attributes to source data on which they are
dependent.

20

22. The method of Claim 20 wherein said a) - e) are performed by a
join engine peer.

23. The method of Claim 22 wherein said transformation is performed

in accordance with a join specification.

24. The method of Claim 23 wherein said source entities are source adapter peers.

5

25. The method of Claim 23 wherein said output attribute is associated with being produced by said join engine peer according to said join specification.

10 26. A computer system comprising a processor coupled to memory wherein said memory comprises instructions that when executed implement a method of data processing comprising:

a) in response to a data change communicated over a peer-to-peer communication system of an enterprise information management system,

15 accessing a data dependency model to determine an output attribute that is dependent on said data change;

b) determining source entities for obtaining source data required to generate said output attribute;

c) querying said source entities to obtain said source data;

20 d) performing transformations on said source data, and said data change, to produce said output attribute; and

e) broadcasting said output attribute over said peer-to-peer communication system.

27. The system of Claim 26 wherein said data dependency model comprises a globally accessible object model comprising data dependency functions which map output attributes to source data on which they are dependent.

5

28. The system of Claim 26 wherein said a) - e) of said method are performed by a join engine peer.

10 29. The system of Claim 28 wherein said transformation is performed in accordance with a join specification.

30. The system of Claim 29 wherein said source entities are source adapter peers.

15 31. The system of Claim 29 wherein said output attribute is associated with being produced by said join engine peer according to said join specification.